

XIAMETER[®] RTV-4131-P1 Base and Curing Agent

High strength silicone pad printing rubber

FEATURES

- Fast thick section cure at room temperature
- If required the product cure can be heat accelerated
- Medium hardness
- High tear resistance
- Very low shrinkage and good dimensional stability

APPLICATIONS

- XIAMETER[®] RTV-4131- P1 Base and Curing Agent is suited for producing silicone print pads. It can be colored with pigments and softened by adding fluid (see below).

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local XIAMETER[®] sales representative prior to writing specifications on this product.

Test	Unit	Value
Base		
Viscosity	mPa.s	27,000
Color		Off White
Curing Agent		
Viscosity	mPa.s	40
Color		Clear
Base and Curing Agent mixture (100:10 by weight)		
Viscosity	mPa.s	13,500
Cured for 24 hours at 25°C (77°F)		
Hardness (Shore A)		25
Tensile strength	kN/m	7.5
Elongation at break	%	850
Tear strength		23
Relative density at 25°C (77°F)		1.12
Linear shrinkage	%	<0.1

DESCRIPTION

XIAMETER RTV-4131-P1 Base and Curing Agent is a two component material consisting of XIAMETER RTV-4131-P1 Base which when mixed with the XIAMETER RTV-4131-P1 Curing Agent cures at room temperature by an addition reaction.

In all cases, it is advisable to check before casting that no adhesion occurs between the cured XIAMETER RTV-4131-P1 Base and Curing Agent and the mold.

HOW TO USE

Mold preparation

The surface of the molds in which the print pads are being cast should be clean and free of loose material.

Mixing

Weigh 100 parts of XIAMETER RTV-4131-P1 Base and 10 parts of XIAMETER RTV-4131-P1 Curing Agent in a clean container, then mix together until the curing agent is completely dispersed in the base. Hand or mechanical mixing can be used, but do not mix for an extended period of time or allow the temperature to exceed 35°C (95°F). Mix sufficiently small quantities to ensure thorough mixing of the base and curing agent.

It is strongly recommended that entrapped air be removed in a vacuum chamber, allowing the mix to completely expand and then collapse. After a further 1-2 minutes under vacuum, the mix should be inspected and if free of air bubbles, can then be used. A volume increase of 3-5 times will occur on vacuum de-airing the mixture, so a suitably large container should be chosen.

The base/curing agent ratio MUST be between 100:9.5 and 100:10.5

Pouring the mixture and curing

Pour the mixed base and curing agent as soon as possible into the mold, avoiding air entrapment. The catalyzed material will cure to a flexible rubber within 8 hours at room temperature (22-24°C/71.6-75.2°F) and the pad can then be removed. If the working temperature is significantly lower, the cure time will be longer. Heat accelerating the cure is possible.

ADDITIONAL INFORMATION

Reducing hardness of XIAMETER RTV-4131-P1 Base and Curing Agent Depending on the shape and fragility of the objects to be printed, pads need to have a specific hardness. 100 parts XIAMETER RTV-4131-P1 Base cured with 10 parts XIAMETER RTV-4131-P1 Curing Agent result in a rubber with a Shore A hardness of 25. This is too hard for many applications. To reduce hardness, silicone oil can be added.

Up to 60-80 parts fluid will reduce XIAMETER RTV-4131-P1 Base and Curing Agent hardness to what is typically needed for printing pads. Table 1 gives some typical properties of XIAMETER RTV-4131-P1 Base and Curing Agent diluted with silicone oil, 50 cSt.

Please note that working time and cure time will be prolonged with fluid addition.

It is important that the mixing ratio of base and curing agent is always 100:10, independent of the amount of fluid added. It is recommended to first weigh the base and curing agent and then add fluid to avoid errors.

Coloring XIAMETER RTV-4131-P1 Base and Curing Agent

Color coding of silicone printing pads is sometimes desired.

The XIAMETER RTV-4131-P1 Base and Curing Agent pigment pastes are particularly well suited to color XIAMETER RTV-4131-P1 Base and Curing Agent Additions of 1-2% by weight are recommended.

Inhibition of cure

All addition cured silicone elastomers are susceptible to cure inhibition when in contact with certain materials and chemicals. Inhibition has occurred if the elastomer is only partially cured after 24 hours, or has a sticky surface in contact with another material. Amines and sulphur containing materials are strong inhibitors, as are organo tin salts used in condensation cure silicone elastomers. Wet or moist surfaces can cause gas bubbles to be formed during cure in the silicone adjacent to the substrate surface. It is strongly recommended that mixing containers, molds, tools and additives be checked for any inhibition effect before use.

Note: XIAMETER RTV-4131-P1 Base and Curing Agent is an industrial product and must not be used in food molding, dental and human skin molding applications.

PRODUCT SAFETY INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL, ENVIRONMENTAL, AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE XIAMETER WEB SITE AT WWW.XIAMETER.COM.

STORAGE

Product should be stored at or below 25°C (77°F) in original, unopened containers. The most up-to-date shelf life information can be found on the XIAMETER Web site in the Product Detail page under Sales Specification.

XIAMETER RTV-4131-P1 Base and Curing Agent can be sensitive to moisture and contamination. Keep in original vented container and ensure it is well closed after use.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses. Not intended for human injection. Not intended for food use.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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Table 1: Typical Properties of XIAMETER RTV-4131-P1 Base and Curing Agent diluted with silicone, oil, 50 cSt

Parts fluid per 100 parts base	Hardness (Shore 00)	Elongation (%)	Tensile Strength (MPa)
40	61	630	2.6
60	52	550	1.8
70	48	550	1.5
80	45	550	1.5